PEOSH
Model Tuberculosis
Infection Control Program

Revised November, 2004

NOTE: The information in this document is not considered to be a substitute for any provision of the PEOSH Act or for any standards issued or adopted by the PEOSH Program.

NEW JERSEY DEPARTMENT of HEALTH and SENIOR SERVICES

NEW JERSEY DEPARTMENT OF LWD LABOR AND WORKFORCE DEVELOPMENT nj.gov/labor

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MODEL TUBERCULOSIS INFECTION CONTROL PROGRAM

INTRODUCTION

The Public Employees Occupational Safety and Health (PEOSH) Program has developed this Model Tuberculosis Infection Control Program to help public employers understand and comply with the NJDHSS PEOSH "Requirements for Preventing Occupational Exposure to Tuberculosis" (TB Requirements) which became effective on July 1, 1997. Employers should use the Model Tuberculosis Infection Control Program in order to establish and maintain a comprehensive Tuberculosis Infection Control Program. Completion of this written program is not required. However, each covered facility **must have a written protocol** for the prompt identification of individuals with suspected or confirmed infectious TB in order to be in compliance with the TB Requirements.

As stated in the revised TB Requirements, all employers who have employees working in one of the five covered facilities (refer to Attachment B of the TB Requirements) **and** whose employees have potential exposure to the exhaled air of an individual with suspected or confirmed infectious TB disease, or are present during a high-hazard medical procedure performed on an individual with suspected or confirmed infectious TB disease, **should:**

- assign responsibility for the TB Infection Control Program;
- conduct a baseline risk assessment;
- conduct periodic risk assessments; and
- develop and implement a written TB Infection Control Program (TB ICP).

The following actions are **mandatory** under the TB Requirements:

- the development of a written protocol for the early identification of individuals with suspected or confirmed infectious TB;
- providing medical surveillance for employees;
- providing case management of infected employees;
- reporting cases of TB;
- providing employee education and training;
- implementing engineering controls (when required);
- providing and ensuring the use of respiratory protection (when required).

INSTRUCTIONS

Attached is a model TB Infection Control Program. The program has been designed in a "fill in the blank" format. Comment sections have also been included for additional information which should be included to tailor this program to your facility.

This model TB Infection Control Program is based on information contained in the CDC's "Guidelines for Preventing the Transmission of *Mycobacterium tuberculosis* in Health-Care Facilities, 1994" (1994 CDC TB Guidelines) referred to as "Attachment A". For a copy of the CDC 1994 TB Guidelines, visit the CDC's website at: www.cdc.gov or call the NJDHSS PEOSH Program at 609-984-1863.

NOTE: There is no requirement that this specific Model Tuberculosis Infection Control Program be used; however, it is required that each facility develop a written protocol for the early identification of individuals with suspected or confirmed infectious TB.

ACKNOWLEDGMENTS

The PEOSH Program would like to thank the New Jersey public workplaces participating in the New Jersey Department of Health and Senior Services' (NJDHSS) and the Centers for Disease Control and Prevention's (CDC) Cooperative Agreement for the "Control of Tuberculosis and Tuberculous Infection in Health-Care Workers". The participating facilities include:

- Bergen Pines County Hospital, Paramus
- Runnells Specialized Hospital, Berkeley Heights
- University of Medicine and Dentistry of New Jersey (UMDNJ), University Hospital, Newark
- UMDNJ, New Jersey Medical School National Tuberculosis Center, Newark

If you have any questions or comments about the information in this model program, please contact the PEOSH Program at (609) 984-1863 or a *www.nj.gov/health/eoh/peoshweb*.

TUBERCULOSIS INFECTION CONTROL PROGRAM

1. NAME OF FACILITY

- This Tuberculosis Infection Control Program was developed for:

  _____
  _____
  _____
  _____
  Name and address of this facility

- This Model TB Infection Control Program was completed on _____:
  Date program was completed

2. PURPOSE

- The purpose of this written TB Infection Control Program is to reduce the risk of transmission of Mycobacterium tuberculosis to employees. The information contained in this program also serves as a resource for educating employees about TB.

3. ASSIGNMENT OF RESPONSIBILITY

- Supervisory responsibility for the TB Infection Control Program has been assigned to _____.
  Name(s) of individual(s) in charge

- _____ can be contacted by calling: _____
  Name(s) of individual(s) in charge *Telephone number(s)*

  or by paging: _____
  Pager number(s)

- This designated person or group of persons has expertise in infection control, occupational health and/or engineering.

- This designated person or group of persons also has been given the authority to implement and enforce the TB Infection Control Program policies.

NOTE: If supervisory responsibility has been assigned to a committee, one person should be designated as the TB contact person.

- Comments: _____
  _____
  _____

4. RISK ASSESSMENT AND PERIODIC REASSESSMENT

NOTE: ***The first step in developing a TB Infection Control Program is to conduct a baseline risk assessment to evaluate the risk for transmission of M. tuberculosis in each area and for each occupational group in the facility for the prior twelve month period. The risk assessment will determine the required frequency of health-care worker Mantoux skin testing. The frequency will depend on whether the risk for transmission of M. tuberculosis in the facility, area, or occupational group is minimal, low, intermediate, or high:***

- *A **minimal risk** category refers to an entire facility which has not treated, admitted or transported an individual with suspected or confirmed infectious TB disease;*
- A ***low risk*** *category refers to areas or occupational groups within a workplace that treat, transport, and/or admit **one to five** individuals with suspected or confirmed infectious TB disease;*
- *An **intermediate risk** category refers to areas or occupational groups within a workplace that treat, transport, and/or admit **six (6) or more** individuals with suspected or confirmed infectious TB disease;*
- *A **high risk** category refers to areas or occupational groups in which a) employee purified-protein derivative(PPD) conversion rates were significantly greater than for areas or groups in which occupational exposure to M. tuberculosis was unlikely or greater than previous rates for the same area or occupational group, and epidemiologic evaluation suggests nosocomial transmission; **or** b) a cluster of PPD test conversions occurred, and epidemiologic evaluation suggests nosocomial transmission of M. tuberculosis; **or** c) possible person-to-person transmission has been detected.*

A. Baseline (initial) Risk Assessment

- A careful assessment of the risk for transmission of *M. tuberculosis* has been conducted for _____
  Specify if this risk assessment is for the entire facility, areas within this facility
  _____.
  and/or occupational groups within this facility.
- The risk assessment was conducted by: _____.
  Name(s) of qualified person
- The baseline risk assessment was based on:
  - the number of individuals with suspected or confirmed infectious TB treated at, transported by, or admitted to this facility or area within this facility was determined to be:

❑ 0 from _____ to _____ = **minimal risk**
Specify date *Specify date*

❑ one to five from _____ to _____ = **low risk**
Specify date *Specify date*

❑ six or more from _____ to _____ = **intermediate risk**
Specify date *Specify date*

If it has been determined that (check appropriate box or boxes):

❑ employee TB skin test conversion rates are significantly greater than for areas or groups in which occupational exposure to *M. tuberculosis* was unlikely or greater than previous rates for the same area or occupational group, and epidemiologic evaluation suggests nosocomial transmission; **or**
❑ a cluster of TB skin test conversions occurred, and epidemiologic evaluation suggests nosocomial transmission of *M. tuberculosis;* **or**
❑ possible person-to-person transmission has been detected;

then this facility, or area within this facility, or occupational group within this facility will temporarily be assigned a **high risk** category.

The RISK LEVEL for _____
Designate if risk level is for the facility, area(s) within the facility, or occupational group
was determined to be _____ **on** _____
Specify if the risk level is minimal, low, intermediate, or high *Specify date*

NOTE: If suspected infectious TB cases have been identified, but are later ruled out as confirmed infectious TB disease by a physician, then a lower risk category can still be assigned to a facility.

B. Periodic Risk Assessments

- At a minimum, a reassessment of risk will be conducted annually, covering the period from:
  _____ to _____
  Specify date *Specify date*

- Based on the reassessment of risk, the number of individuals with suspected or confirmed infectious TB treated at, transported by, or admitted to this facility in the last 12 month period was determined to be:

- ❑ was 0 from _____ to _____ = **minimal risk**
  Specify date *Specify date*

- ❑ one to five from _____ to _____ = **low risk**
  Specify date *Specify date*

- ❑ six or more from _____ to _____ = **intermediate risk**
  Specify date *Specify date*

If it has been determined that (check appropriate box or boxes):

- ❑ employee TB skin test conversion rates are significantly greater than for areas or groups in which occupational exposure to *M. tuberculosis* was unlikely or greater than previous rates for the same area or occupational group, and epidemiologic evaluation suggests nosocomial transmission; **or**
- ❑ a cluster of TB skin test conversions occurred, and epidemiologic evaluation suggests nosocomial transmission of *M. tuberculosis;* **or**
- ❑ possible person-to-person transmission has been detected;

then this facility will temporarily be assigned a **high risk** category.

The RISK LEVEL for _____
Designate if risk level is for the facility, area(s) within the facility, or occupational group

was determined to be _____ on _____
Specify if the risk level is minimal, low, intermediate, or high *Specify date*

NOTE: ***If the reassessment of risk in a minimal risk facility indicates that an individual with suspected infectious TB disease (without a TB rule-out) or confirmed infectious TB disease has been treated at, transported by, or admitted to the facility, their risk level should be promptly changed and the TB Infection Control Program would need to be reassessed and revised to reflect the new risk level.***

- The number of infectious TB cases reported for a facility's area of service, county, etc., should be used as an indicator of the prevalence of the disease. This number is not used to determine the risk category for a facility, but should be determined for awareness and education purposes.

  - The profile of TB in the community served by this facility was determined to be _____.
    # of individuals confirmed to have infectious TB

  - This quantity represents the number of infectious TB cases reported in the (check):

    - ❑ municipality (city, town or township)
    - ❑ areas of service _____
    - ❑ county
    - ❑ state

- This information was obtained by contacting the _____.
  Name of local/county health department
  at _____ **OR** by contacting the NJDHSS, TB Program at (609) 588-7522.

- Comments: _____
  _____
  _____

5. DEVELOPMENT AND IMPLEMENTATION OF A TB INFECTION CONTROL PLAN

A. Identification and Assessment of Individuals With Suspected or Confirmed Infectious TB Disease

- If individuals with suspected or confirmed infectious TB disease enter this facility, they will be promptly identified by employees who are the first points of contact. These employees include _____.
  Specify employees (booking, patient assessment, admissions)

- Employees who are the first points of contact have been trained to ask questions that will facilitate identification of individuals with suspected or confirmed infectious TB disease. (Refer to Section 9.)

- Potentially exposed employees have been trained to recognize the signs and symptoms of TB disease noted by the CDC. These signs and symptoms include persistent cough (lasting greater than 3 weeks), bloody sputum, night sweats, weight loss, anorexia, and/or fever, and other risk factors.

B. Management of Individuals With Suspected or Confirmed Infectious TB Disease for Facilities With Collaborative Agreements (an agreement with a facility with an isolation room and appropriate protocols for handing TB patients)

- If an individual has been identified with suspected or confirmed infectious TB disease, they will immediately be placed in _____.
  Specify room or area
  which is separate from other individuals and is not an open waiting area.

- A surgical mask, a box of tissues, and instructions in the use of both will be provided to the identified individual until prompt referral to a collaborating facility occurs.

C. Referral of Individuals to a Collaborating Facility for Diagnostic Evaluation and Treatment or TB Rule-out

- Arrangements with _____ have been
  Name of collaborating facility, phone #, contact name
  made in the event an individual is identified with suspected or confirmed infectious TB disease. This individual will promptly be transported by
  _____
  Specify how individual will be transported to collaborating facility. Include phone # and contact name

- Individuals with suspected or confirmed infectious TB disease will be transported to the collaborating facility in vehicles that are open (e.g., open windows and ventilation controls set on fresh outside air).

- If individuals with suspected or confirmed infectious TB cannot be transported to the collaborating facility in vehicles that are open, _____
  Name of other transporter
  will be contacted to transport them to the collaborating facility in open vehicles or while the employee wears respiratory protection.

NOTE: If individuals with suspected or confirmed infectious TB are promptly (in less than five hours) transported to a collaborating facility for inpatient treatment and/or high hazard procedures, the referring facility is not required to have an AFB isolation room.

- Comments: _____
  _____
  _____

D. Management of Individuals With Suspected or Confirmed Infectious TB Disease in Facilities With No Collaborating Agreements

- If an individual has been identified with suspected or confirmed TB disease, they will immediately be placed in a negative pressure AFB isolation room.

- Negative pressure isolation rooms at this facility are room(s): _____.

  Designate negative pressure rooms by number and location

- A surgical mask, a box of tissues, and instructions in their use will be provided for the individual.

- The individual will be instructed to wear the mask and use the tissues while being transported to the negative pressure AFB isolation room.

6. MEDICAL SURVEILLANCE FOR EMPLOYEES

A. Initial (Baseline) Screening

NOTE:	***The two-step tuberculin skin testing procedure is recommended by the CDC for the baseline testing of persons who will periodically receive tuberculin skin tests to reduce the likelihood of mistaking a boosted reaction for a new infection. If the initial tuberculin-test result is classified as negative, a second test needs to be done 1 to 3 weeks later. If the reaction to the second test is positive, it probably represents a boosted reaction. The employee should be referred to his or her own physician for further evaluation. If the second result is also negative, the person is classified as not infected. A positive reaction to a subsequent test would indicate new infection (i.e., a skin-test conversion) in such a person. Refer to Attachment A, pages 59-61, regarding the application, reading, and interpretation of PPD skin tests. The Mantoux TB skin test is the preferred method of skin testing.***

- All employees (including current potentially exposed and new employees prior to exposure) will be offered a Mantoux TB skin test (at no cost to them) in low, intermediate, and high risk category facilities.

NOTE:	***Mantoux skin testing in minimal risk facilities is recommended, but is not required under the PEOSH Program.***

- The Mantoux two-step tuberculin skin test will be used for employees who have an initially negative PPD skin test result and who have not had a documented negative TB skin test during the preceding 12 months.

- TB skin testing will be offered at a time and location convenient to employees.

- Follow-up and treatment evaluations will also be offered to employees at no cost to them.

- The reading and interpretation of TB skin tests will be performed by

_____

Specify qualified individual

NOTE:	***Acceptable reading and interpretation of TB skin tests are described in the 1994 CDC TB Guidelines on pages 59-65.***

- Comments: _____

_____

_____

B. Periodic Screening

- Refer to the Risk Assessment in order to determine the frequency of TB skin testing for areas and/or occupational groups within the facility. The exact location and/or job title should be used, such as: nurses on the third floor; admissions in the TB Clinic; or the booking area in the jail.

- Check appropriate box or boxes that apply to this facility:

  ❑ One-step TB skin testing will be offered **annually** for the following occupational groups or areas in **low risk** categories:

  - _____
  - _____
  - _____
  - _____
  - _____

  ❑ One-step TB skin testing will be offered every **six (6) months** for the following occupational groups or areas in **intermediate risk** categories:

  - _____
  - _____
  - _____
  - _____
  - _____

  ❑ One-step TB skin testing will be offered every **three (3) months** for the following occupational groups or areas in **high risk** categories until the cause of transmission is identified and corrected:

  - _____
  - _____
  - _____
  - _____
  - _____

- Periodic skin testing will be conducted by notifying: _____,
  The employee and/or supervisor
  during _____.
  Hire month, birthday OR specify other means to ensure that TB skin testing is offered

- Employees with a documented positive (in millimeters of induration) TB skin test, who have received treatment for TB disease **or** preventive therapy for TB infection, will be exempt from further TB skin testing.

- Exempt employees will be informed about the symptoms of TB by:
  _____
  Specify how this is to be done
  and the need for immediate evaluation of any pulmonary symptoms suggestive of TB by _____ to determine if
  Specify the physician or trained health-care provider
  symptoms of TB disease have developed.

- Comments: _____
  _____
  _____

C. Reassessment Following an Exposure or Change in Health

- Employees who experience an exposure, without appropriate protection, to an individual with suspected or confirmed infectious TB disease will be properly managed by: _____
  Specify how employee will be managed. i.e., PPD skin testing

- Employees who develop symptoms of TB will be immediately evaluated by:
  _____
  Specify how employee will be evaluated. i.e., PPD skin testing, chest x-rays, etc.

NOTE: Refer to the 1994 CDC TB Guidelines pages 38-41 for appropriate reassessment testing information.

- Comments: _____
  _____
  _____

7. CASE MANAGEMENT OF INFECTED EMPLOYEES

A. Protocol for New Converters

- Employees who convert to a positive TB skin test (as defined by the CDC in Attachment A, pages 59-65), will be offered _____
  _____
  Specify appropriate physical, laboratory, and radiographic evaluations
  to determine whether the employee has active TB disease.

- Follow-up and treatment evaluations will also be offered at no cost to employees and at a time and location convenient to them.

NOTE:	***If an employee's initial skin test is given within two weeks of his or her start date and is positive, a workplace exposure could not have caused the infection. The minimum time necessary for TB transmission to result in a conversion to a positive skin test is two weeks.***

B. Work Restrictions for Infectious Employees

- Employees, with physician-diagnosed infectious or clinically suspected infectious TB disease, will be restricted from work until _____
  Specify physician
  certifies that they are no longer contagious, or infectious TB disease has been ruled out.

- Employees who discontinue treatment before they are cured will be evaluated promptly for infectiousness.

- If the evaluation indicates that the employee is still contagious, they will be excluded from the work until treatment has been resumed and they are no longer contagious.

- Comments: _____
  _____
  _____

8. REPORTING CASES OF TB:

- The _____ will report employees with physician-diagnosed
  Specify person and/or department
  active or clinically-suspected active TB disease by phone to the NJDHSS, Tuberculosis Program at (609) 588-7522 within 24 hours and in writing (Tuberculosis Program, P.O. Box 369, 3635 Quakerbridge Road, Trenton, New Jersey 08625-0369) within 72 hours. The report can also be faxed to (609) 588-7562.

- Comments: _____
  _____
  _____

9. EMPLOYEE EDUCATION AND TRAINING:

- TB training and education shall be provided to employees who may be the first points of contact to individuals with suspected or confirmed infectious TB disease, and other employees determined by this facility to have the potential for exposure. The employees at this facility having the potential for exposure to individuals with suspected or confirmed infectious TB disease include (list job classifications such as nurses, housekeeping, emergency service personnel, and police, etc.,)

  - _____
  - _____
  - _____
  - _____
  - _____
  - _____

- **Employees must be trained to ask questions that will facilitate identification of individuals with signs and symptoms suggestive of TB and to consider other risk factors.**

- **These signs and symptoms include:**

  - **persistent cough (i.e., lasting equal to or greater than three (3) weeks);**
  - **bloody sputum (coughing up blood);**
  - **night sweats;**
  - **weight loss;**
  - **anorexia (loss of appetite);**
  - **fever;**
  - **chills;**
  - **lethargy/weakness.**

- **Other risk factors to consider include:**

  - past history of TB infection (positive TB skin test result) or inadequate treatment for infectious TB disease;
  - close contact to an individual with infectious TB disease;
  - foreign-born persons from areas where infectious TB disease is common, medically underserved, low income populations;
  - age (children under the age of 4 and elderly persons);
  - persons who inject illegal drugs;
  - locally identified groups with high rates of infections (e.g., migrant farm workers, alcoholics, or homeless persons); and/or
  - immunocompromised persons (HIV infection).

- **Other topics to be included in the training program include:**

  - the mode of TB transmission;
  - medical surveillance and therapy;
  - site-specific protocols including the purpose and proper use of controls;
  - post-exposure protocols to be followed after an exposure incident.

NOTE: The content of the education program should be based on the training elements listed on pages 36 and 37 of the 1994 CDC TB Guidelines as they relate to employee work responsibilities.

- Refer to _____ for a complete listing of
  Specify location of records or attach
  the names of employees who received training, the dates the training was received, and a training outline.

- The need for additional training will be reevaluated and repeated as necessary.

- Comments: _____

  _____

  _____

10. ENGINEERING CONTROLS

- If individuals with suspected or confirmed infectious TB are admitted to this facility as in-patients, they will be immediately placed into an AFB isolation room. AFB isolation room(s) in this facility are located:

  _____
  Specify the exact location by floor and room number

  _____

- If AFB isolation rooms are not available for use during aerosol generating procedures on individuals with suspected or confirmed infectious TB, acceptable local ventilation devices will be used. In this facility the acceptable local ventilation devices are located:

  _____
  Specify location(s) of local ventilation devices and type of device (i.e. booth, hood, etc.)

- AFB isolation rooms will be maintained under negative pressure while in use for an individual with suspected or confirmed infectious TB. Negative pressure will be tested daily using _____
  Specify how negative pressure will be monitored (smoke tube, pressure gauge, etc.)

- The air exhausted from AFB isolation or treatment rooms will be exhausted directly to the outside. In this facility, air from room(s):

  _____
  Specify room numbers or location
  _____is directly exhausted to the outside.

- All potentially contaminated air which is ducted through this facility will be kept under negative pressure until it is discharged safely outside. The air will not be discharged into occupied areas, walkways, or near fresh air intakes or operable windows.

- If air from AFB isolation or treatment rooms or local exhaust ventilation devices can not be directly exhausted to the outside, HEPA filters will be installed on the units or in the duct work. HEPA filters have been installed at the following locations:

  _____

  Specify location(s) of HEPA filters

- The HEPA filters will be changed _____

  Specify time frame or pressure reading if room or local ventilation device is equipped with a gauge

- After high hazard procedures are performed and patients have left the booth, hood, or other enclosure, _____ will be allowed to pass for at least
  Specify the amount of time
  99% of the airborne contaminants to be removed.

- If employees must enter the room before 99% of the airborne contaminants are removed, a respirator will be worn.

NOTE: Employers must use the formula for the rate of purging airborne contaminants to calculate the purge time interval. This formula can be found on page 72 of the 1994 CDC TB Guidelines.

11. RESPIRATORY PROTECTION

- All potentially exposed employees will wear National Institute for Occupational Safety and Health (NIOSH)-approved respirators for protection against tuberculosis when:

  - entering an isolation room housing an individual with suspected or confirmed infectious TB disease;

  - employees are present during the performance of high-hazard procedures on individuals with suspected or confirmed infectious TB. The high-hazard procedures performed in this facility which require the use of respiratory protection are:

    _____

    Specify the high hazard procedures performed (sputum collection, bronchoscopy,

    _____

    aerosolized medication treatment, endoscopy, etc.)

  - employees must enter a booth, enclosure, or room where high-hazard procedures are performed during a purge time interval before 99% of the airborne contaminants have been removed;

  - emergency medical response personnel or others must transport an individual with suspected or confirmed infectious TB disease in a closed vehicle.

- A respiratory protection program will be established and maintained inclusive of the requirements outlined in 29 CFR 1910.134.

- Only respirators meeting the performance criteria established by NIOSH for exposure to TB will be permitted. The minimally acceptable level of respiratory protection for tuberculosis will be the N-95 series.

- The use and reuse of disposable respirators will be limited by hygiene considerations, damage to the filter, or by increased breathing resistance.

- Comments: _____

  _____

  _____

12. ACCESS TO EMPLOYEE EXPOSURE AND MEDICAL RECORDS

- Records concerning employee exposure to TB, TB skin testing results, and medical evaluations and treatment will be maintained by _____
  Specify person and/or department

- Comments: _____

  _____

  _____

13. LOG AND SUMMARY OF OCCUPATIONAL INJURIES AND ILLNESSES

- Employee TB infections (positive TB skin test) and TB disease will be recorded on the NJOSH 300 Log by_____.
  Specify name of person and/or department

- If an employee's TB infection progresses to TB disease during the five-year maintenance period, the original NJOSH 300 log entry for the infection will be updated to reflect the new information.

- Comments: _____

  _____

  _____